

### **REMARKS**

Claims 12 and 28-30 are pending in this application and stand rejected. Claims 29 and 30 are currently amended. Claims 1-11 and 13-27 have been previously canceled without prejudice or disclaimer. No new matter is added. The undersigned representative respectfully requests reconsideration and allowance of these claims in view of the following remarks.<sup>1</sup>

#### **Claim Rejections under 35 U.S.C. §101**

The Office Action recites that claims 29 and 30 are rejected under 35 U.S.C. §101 “because the claimed invention is directed to Functional Descriptive material per se [sic] (software per se).” *Office Action*, page 2.

The Office Action does not state a *prima facie* case of unpatentability under 35 USC §101, at least in part because the Office Action does not apply the statute to the language of the rejected claims. The Office Action merely recites policy and case law after summarily rejecting the claims.

The Office Action acknowledges:

... a claimed computer-readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure's functionality to be realized, and is thus statutory.

The undersigned draws the Office's attention to the language of the claims:

*A software product comprising:*

*digital information storage media; and*

*processor instructions,*

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<sup>1</sup> As the undersigned representative's remarks with respect to the Examiner's rejections are sufficient to overcome these rejections, the undersigned representative's silence as to assertions by the Examiner in the Office Action or certain requirements that may be applicable to such rejections (e.g., assertions regarding dependent claims, whether a reference constitutes prior art, whether references are legally combinable for obviousness purposes) is not a concession by the undersigned representative that such assertions are accurate or such requirements have been met, and the undersigned representative reserves the right to analyze and dispute such in the future.

*residing on the media, and*

*operable, when executed by at least one processor, to:*

*determine a linear combination of structured cash flow exchanges having a net present value of substantially zero and corresponding to maximum flow for a graph having at least one node corresponding to at least one swap such that the set of structured cash flow exchanges determined thereby is substantially hedged.*

The claim language clearly claims a computer readable medium (“digital information storage media”) defining interrelationships (e.g., instructions residing on the media and operable upon execution by a processor to realize functionality).

When applied to the language of the claims, the principles recited in the Office Action result in the conclusion that Claim 12 and Claim 28 are patentable under 35 USC §101.

**Claim Rejections under 35 U.S.C. §103:**

Obviousness under §103 requires that the Office must (i) identify the individual elements of the claims and properly construe these individual elements,<sup>2</sup> and (ii) identify corresponding elements disclosed in the allegedly anticipating reference and compare these allegedly corresponding elements to the individual elements of the claims.<sup>3</sup> The factual determination of anticipation under 35 U.S.C. requires the identical disclosure, either explicitly or inherently, of each element of a claimed invention.<sup>4</sup>

Rejections on obviousness grounds under §103 cannot be sustained by merely conclusory statements regarding the reasons to combine references; instead there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.<sup>5</sup> Moreover, this analysis should be made explicit.

***Claims 12 and 28***

Claims 12 and 28 are rejected under 35 USC §103(a) as being unpatentable over U.S. Patent No. 6,086,609 to Hausman (hereinafter “HAUSMAN”) in view of U.S. Patent No. 6,317,727 to May (hereinafter “MAY”). The undersigned respectfully traverses this rejection.

***Regarding Rejection of Claims 12 and 28 as Unpatentable under 35 USC 103(a) Over HAUSMAN in View of MAY***

**The OA does not identify elements in the references corresponding to all the limitations of each of Claim 12 and Claim 28.** Specifically, the applied art does not teach or suggest

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<sup>2</sup> Panduit Corp. v. Dennison Mfg. Co., 810 F.2d 1561, 1567-68 (Fed. Cir. 1987) (In making a patentability determination, analysis must begin with the question, "what is the invention claimed?" since "[c]laim interpretation, . . . will normally control the remainder of the decisional process"); see Gechter v. Davidson, 116 F.3d 1454, 1460 (Fed. Cir. 1997) (requiring explicit claim construction as to any terms in dispute).

<sup>3</sup> Lindermann Maschinenfabrik GMBH v. American Hoist & Derrick Co., 730 F.2d 1452, 221 USPQ 481 (Fed. Cir. 1984).

<sup>4</sup> In re Rijckaert, 9 F.3d 1531, 28 USPQ2d 1955 (Fed. Cir. 1993).

<sup>5</sup> KSR Int'l Co. v. Teleflex Inc., 127 S. Ct. 1727, 1741 (2007)(quoting In re Kahn, 441 F.3d 977, 988 (Fed. Cir. 2006)).

a data structure corresponding to a graph having nodes corresponding to a collection of at least partial exchange definitions including at least one at least partial swap definition,  
 a portion of the data structure corresponding to at least one edge between exchange definitions having at least partially compatible terms, the at least partially compatible terms including at least one of:  
an underlying, a start date, an end date, and a variance; and  
determining, via processor instruction, data corresponding to a linear combination of edges corresponding to a maximum notional amount for the graph with respect to one or more exchange definitions

(Emphasis added for at least some elements not taught or disclosed by the applied references).

The OA admits that that "Hausman does not disclose a method for determining a set of structured cash flow for exchanges comprising: nodes corresponding to a collection of at least partial exchanged definitions/cash flow definitions including at least one partial swap definitions, and edge between exchange definitions/cash flow definitions having at least partially compatibles terms including at least one of: an underlying, a start date, an end date, and a variance." OA, p. 4.

Additionally, the OA asserts, at OA, p. 8:

Note that the claimed invention described nothing more than constructing a graph contains nodes and edges and applying specific financial data (exchange definitions/cash flow definitions for nodes, compatible terms for edges) into the graph. Therefore, it would have been obvious to one with ordinary skill in the art at the time the invention was made to modify Hausman's to apply the exchange definitions/cash flow definitions and the compatible terms as taught by May, into Hausman's nodes and edges, for the purpose of enhancing the method for determining a set of structured cash flow for the exchanges.

Applicant respectfully points out that the examiner's comments are inconsistent with Hausman. Hausman observes that "in addressing real-world problems that may be characterized as MILPQs, it is typically difficult to set up the equations (such as those described above), because it is typically difficult to develop a manner of understanding such problems in such a way as to permit the equations to be easily written." Hausman at Col. 1, line 67 – Col. 2, line 5. Hausman goes on to say that

It must be emphasized that constraints which arise in the majority of real-world network and linear programming problems entail complex relationships interrelating aspects of the problem. Relationships such as proportionality of one set of node or link flows with respect to combinations of conditional dependencies among elements and groups of elements which are not otherwise related, are not easily represented using existing network techniques, if at all.

Hausman at Col. 2, lines 39-47.

As these statements make clear, it was not at all obvious to one of ordinary skill in the art how to modify Hausman's linear programming techniques to apply to swap transactions as claimed. Hausman contains no discussion of swap transactions, and provides no indication of how such transactions could be set up using his method, much less how his method might be used to maximize a notional amount for a graph having nodes corresponding to a collection of at least partial exchange definitions including at least one at least partial swap definition as claimed.

For example, as the examiner notes, Hausman is directed to optimizing the operation of a system of production. As a result, Hausman, including the portions cited by the examiner, are clearly directed to traditional network flow problems of supply, as would be expected in optimizing a system of production. (see, e.g. Hausman, Col. 7, lines 20-67).

In contrast, as noted at p. 1, line 25 of the instant application, notional amounts typically need not be exchanged in swap transactions. Swap transactions therefore have different dynamics than traditional supply problems like those to which Hausman is directed. Hausman's methods are not directed to, and Hausman does not disclose a method for, determining a set of structured cash flows for exchange by maximizing a notional amount of a collection of at least partial exchange definitions including at least one at least partial swap definition as claimed. OA at 3.

May does not cure the deficiencies of Hausman. Although May discloses swap transactions, May contains no teaching of linear or network flow analysis, and provides no indication of how these methods might be used to maximize a notional amount for a graph having nodes corresponding to a collection of at least partial exchange definitions including at least one at least partial swap definition as claimed. Hausman and May either alone or in combination do not provide any disclosure of maximizing a notional amount for a graph having nodes corresponding to a collection of at least partial exchange definitions including at least one

at least partial swap definition as claimed. Therefore, the combination does not render claims 12 and 28 obvious.

*Regarding Rejection of Claims 29 and 30 as Unpatentable under 35 USC 103(a) Over HAUSMAN in View of YOUNG*

Claims 29 and 30 are rejected under 35 USC §103(a) as being unpatentable over U.S. Patent No. 6,086,609 to Hausman (hereinafter “HAUSMAN”) in view of U.S. Patent No. 6,393,409 to Young (hereinafter “YOUNG”). The examiner refers to a patent to John on p. 6 of the Action. This appears to be a typo; Applicant believes that Young is intended and has responded accordingly.

**The OA does not identify elements in the references corresponding to all the limitations of each of Claim 29 and Claim 30.**

Combining Young with Hausman also fails to teach or suggest all of the limitations of claims 29 and 30. As explained above, swap transactions have different dynamics than traditional supply problems like those to which Hausman is directed. Hausman is not directed to, and Hausman does not teach, processor instructions operable to determinine a linear combination of structured cash flow exchanges having a net present value of substantially zero and corresponding to maximum flow for a graph having at least one node corresponding to at least one swap as recited by claims 29 and 30.

Young does not cure the deficiencies of Hausman. Young teaches the use of linear programming to optimize a portfolio of fixed income securities to maximize the participant firms’ total book losses. Young, Col. 1, lines 6-8; col. 2, lines 59-65. Young does not teach any graph at all, let alone a graph having at least one node corresponding to at least one swap, and still less any maximum flow for such a graph as recited by claims 29 and 30. Neither Young nor Hausman, alone or in combination, provide any indication of how to construct such a graph or determine such a maximum flow.

Nevertheless, to clarify the claimed invention, Applicants have amended claims 29 and 30 by adding the limitation that the set of structured cash flow exchanges determined thereby is substantially hedged. This objective is markedly different from Young’s objective of maximizing total book losses.

Accordingly because neither Hausman nor Young provides any disclosure or suggestion of processor instructions operable to determine a linear combination of structured cash flow exchanges having a net present value of substantially zero and corresponding to maximum flow for a graph having at least one node corresponding to at least one swap such that the set of structured cash flow exchanges determined thereby is substantially hedged, the combination does not render claims 29 and 30 obvious.

For at least these reasons, the undersigned requests withdrawal of the rejection of all pending claims under §103.

### **CONCLUSION**

The foregoing is submitted as a full and complete response to the OA mailed 5/24/2010. With consideration of the above remarks, the undersigned submits that this application is in condition for allowance, and such disposition is earnestly solicited.

The OA contains characterizations of the claims and the references with which the Applicants do not necessarily agree. Unless expressly noted otherwise, Applicants decline to subscribe to any statement or characterization in the OA. In discussing the specification, claims, and drawings in this Reply, it is to be understood that Applicants are in no way intending to limit the scope of the claims to any exemplary embodiments described in the specification and/or shown in the drawings. Rather, Applicants are entitled to have the claims interpreted to the maximum extent permitted by statute, regulation, and applicable case law.

**The undersigned again requests an in-person interview at the Examiner's earliest convenience to identify and resolve any issues impeding examination of the application.<sup>6</sup>**

Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 14-1437, and please credit any excess fees to such deposit account.

Respectfully submitted,

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<sup>6</sup> A request for interview filed on 2010 01 07 went unanswered by the Office.